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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,861	04/11/2005	Hiroshi Fukushima	3693-62	2268
23117 7590 04/23/2007 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER NGUYEN, LAUREN	
			ART UNIT	PAPER NUMBER
			2871	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary

Application No.

10/530,861

Applicant(s)

FUKUSHIMA ET AL.

Examiner

Lauren Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2007.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) 5, 6 and 9 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-4, 7-8, and 10-16 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 04/11/2005.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
 5) ☐ Notice of Informal Patent Application
 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of **Species A1** and **Species B1** inventions, including **claims 1-4, 7-8, and 10-16**, in the reply filed on 03/30/2007 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted was filed on the mailing date of the instant application on 04/11/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

a. A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-3, 7, 10, and 12-16** are rejected under 35 U.S.C. 102(b) as being anticipated by **Matsumura et al. (U.S. Patent Number 6,246,451)**.

6. With respect to **claim 1**, as shown in figures 1-7, **Matsumura et al.** discloses a parallax barrier device comprising a pair of transparent-electrode substrates (31, figures 5A-5B) each provided with a transparent electrode (32),

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- wherein a barrier light-shielding part (2bb) and a light-transmitting part (2aa) are formed in a gap between the pair of transparent-electrode substrates (figure 2),
- a liquid crystal layer is formed in the barrier light-shielding part (see at least column 6, lines 61-64), and
- a resin layer having the property of transmitting light is formed in the light-transmitting part (see at least column 6, lines 56-60),
- the barrier light-shielding part separates light for a first image viewed from a first direction and light for a second image viewed from a second direction different from the first direction (see at least column 7, lines 57-67 and column 8, lines 5-13), and
- the light-transmitting part transmits the light for the first image and the light for the second image (see at least column 6, lines 56-60).

Please note that the claims are directed to apparatus which must be distinguished over the prior art in term of structure rather than functions [MPEP 2114]. Hence, the functional limitations of "*the barrier light-shielding part separates light for a first image viewed from a first direction and light for a second image viewed from a second direction different from the first direction, and the light-transmitting part transmits the light for the first image and the light for the second image*" which are narrative in form have not been given any patentable weight. In order to be given patentable weight, a functional recitation must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language. See *In re Danley*, 120 USPQ 528, 531 (CCPA 1959).

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7. With respect to **claim 2**, as applied to **claim 1** above and shown in figures 1-7, **Matsumura et al.** discloses the first image is viewed by a viewer's left eye, and the second image is viewed by the viewer's right eye (see at least column 8, lines 19-26).

8. With respect to **claim 3**, as applied to **claim 1** above and shown in figures 1-7, **Matsumura et al.** discloses the barrier light-shielding part and the light-transmitting part are alternately arranged along a direction in a plane parallel to the pair of transparent-electrode substrates (figures 2 and 5A-5B), and the width of the barrier light-shielding part in the direction in the plane is equal to the width of the light-transmitting part in the direction in the plane (figure 4).

9. With respect to **claim 7**, as applied to **claim 1** above and shown in figures 1-7, **Matsumura et al.** discloses the transparent electrode provided in each of the pair of transparent-electrode substrates is a common electrode (figures 5A-5B).

10. With respect to **claim 10**, as applied to **claim 1** above and shown in figures 1-7, **Matsumura et al.** discloses the resin layer (2bb) having the property of transmitting light also functions as a spacer for maintaining a uniform space between the pair of transparent-electrode substrates (figure 2).

11. With respect to **claim 12**, as applied to **claim 1** above and shown in figures 1-7, **Matsumura et al.** discloses the parallax barrier device of claim 1 (2); and an image display device (6) including a first pixel part constituting the first image and a second pixel part constituting the second image (L and R).

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12. With respect to **claim 13**, as applied to **claim 1** above and shown in figures 1-7, **Matsumura et al.** discloses the first pixel part is a pixel part for a left eye (L2 and L4, figure 1), and the second pixel part is a pixel part for a right eye (R1 and R3).

13. With respect to **claim 14**, as applied to **claim 12** above and shown in figures 1-7, **Matsumura et al.** discloses a light source (10) placed at a larger distance from a viewer (EL and ER) than those from the parallax barrier device (2) and the image display device (6).

14. With respect to **claim 15**, as applied to **claim 12** above and shown in figures 1-7, **Matsumura et al.** discloses the liquid crystal layer switches display between a first display and a second display by switching the state of light between opaque and transmission in accordance with an electric signal applied to the pair of transparent-electrode substrates (figures 5A-5B; see at least column 7, lines 1-4).

15. With respect to **claim 16**, as applied to **claim 13** above and shown in figures 1-7, **Matsumura et al.** discloses the liquid crystal layer switches display between a stereoscopic display and a plane display by switching the state of light between opaque and transmission in accordance with an electric signal applied to the pair of transparent-electrode substrates (35, figures 5A-5B; see at least column 7, lines 1-4).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Matsumura et al.** (U.S. Patent Number 6,246,451) in view of **Official Notice**.

18. With respect to **claim 4**, **Matsumura et al.** discloses the limitations as shown in the rejection of **claim 1** above. **Matsumura et al.** does not disclose the liquid crystal layer being a liquid crystal layer exhibiting homogeneous alignment and containing a liquid crystal material whose dielectric-constant anisotropy is positive, and the liquid crystal layer having a retardation of $1/2$ of the wavelength of light entering the liquid crystal layer under application of no voltage.

The examiner takes Official Notice that the use of '*the liquid crystal layer being a liquid crystal layer exhibiting homogeneous alignment and containing a liquid crystal material whose dielectric-constant anisotropy is positive, and the liquid crystal layer having a retardation of $1/2$ of the wavelength of light entering the liquid crystal layer under application of no voltage*' was well-known in the art at the time of the invention. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the liquid crystal layer exhibiting homogeneous alignment and having a retardation of $1/2$ of the wavelength of light entering the liquid crystal layer under application of no voltage since the examiner takes Official Notice of the equivalent of "*the liquid crystal layer exhibiting homogeneous alignment and having a retardation of $1/2$ of the wavelength of light entering the liquid crystal layer under application of no voltage*" and "*the liquid crystal layer exhibiting homeotropic alignment and having a retardation of $1/2$ of the wavelength of light entering the liquid crystal layer under application of a voltage*" for their use in the liquid crystal display art and the selection of any of these known equivalents to provide a liquid crystal layer for an LCD device would be within the level of ordinary skill in the art. **Claim 4** is therefore unpatentable.

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19. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Matsumura et al.** (U.S. Patent Number 6,246,451) in view of **Eichenlaub** (U.S. Patent Number 6,157,424).

20. With respect to **claim 8**, **Matsumura et al.** discloses the limitations as shown in the rejection of **claim 1** above. **Matsumura et al.** does not disclose a pair of polarizers sandwiching the pair of transparent-electrode substrates therebetween, wherein the directions of transmission easy axes of the pair of polarizers are approximately parallel to each other.

However, **Eichenlaub**, in at least column 6, lines 66-67; and column 7, and 1-4, figure 6, discloses a pair of polarizers (35 and 40) sandwiching the pair of transparent-electrode substrates (36 and 38) therebetween, wherein the directions of transmission easy axes of the pair of polarizers are approximately parallel to each other (see at least column 7, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the parallax barrier device of **Matsumura et al.** with the pair of polarizers of **Eichenlaub** because such modification would provide a thinner, simpler, and less expensive device in which 2D image can be viewed without applying voltage to the barrier device and 3D image can be viewed by applying voltage to the barrier device (see at least column 7, lines 10-25).

21. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Matsumura et al.** (U.S. Patent Number 6,246,451) in view of **Lipton et al.** (U.S. Patent Number 5,686,975).

22. With respect to **claim 11**, **Matsumura et al.** discloses the transparent-electrode substrates as shown in the rejection of **claim 1** above. **Matsumura et al.** does not disclose the method for fabricating the parallax barrier device of **claim 1**.

However, **Lipton et al.**, in at least column 6, lines 44-46 and lines 59-62, figures 2A-2B, discloses applying a resin material having an approximately isotropic refractive index and having

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the property of transmitting light onto the transparent-electrode substrates (203; see at least column 6, lines 44-46); and performing, on the resin material, processes of light exposure using a photo mask, development and baking, thereby forming the resin layer (see at least column 6, lines 59-62).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the method for fabricating the parallax barrier device with the teaching of **Lipton et al.** since it was known in the LCD art that such method is a common practice to pattern the resin layer (see at least column 6, lines 51-53).

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nakayama et al. (U.S. Patent Number 5,831,765) discloses a 2D/3D compatible type image display device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lauren Nguyen whose telephone number is (571) 270-1428. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lauren Nguyen

April 5, 2007


ANDREW C. RICHTER
PRIMARY EXAMINER